

OPTICA ACTA

An International Journal of Theoretical and Applied Optics

Volume 17



Printed and Published by

TAYLOR & FRANCIS LTD

10-14 MACKLIN STREET LONDON WC2B 5NF

Founded under the auspices of the International Commission for Optics



Digitized by the Internet Archive
in 2024

CONTENTS OF VOLUME 17

No. 1 January 1970

	Page
Editorial	1
Announcement:	
President of the International Commission for Optics for 1969-72 ..	3
Effects of spatial coherence on holography. KAZUMI MURATA, TOSHIMITSU ASAKURA and HIROFUMI FUJIWARA	5
An optical signal processing technique for directional systems using circular arrays. PETER LEWIS	19
Some experiments on the optical processing of signals from circular aerial arrays. M. J. WORRALL	37
An analysis of the generalized binary filter. K. G. BIRCH	43
On image evaluation and enhancement. LEO LEVI	59
Minutes of the 8th Congress of the International Commission for Optics held on 14-19 July 1969, at Reading, England	77

No. 2 February 1970

Hologram-interferometry—a geometrical approach. JOSE PASTOR, GEORGE E. EVANS and JAMES S. HARRIS	81
Expositions multiples sur un hologramme. Qualité des images restituées. Applications. H. ROYER et P. SMIGIELSKI	97
Theory of a compact radial shearing laser interferometer. S. C. SOM	107
Ellipsometry of a transparent film overlaid on a transparent substrate having a surface layer. KOREO KINOSITA, MINEO NISHIBORI, MASAKI YAMAMOTO and HIDESHI YOKOTA	115
Light-gathering properties of curved fibre optic faceplates. J. A. CLARKE	123
Calcul des coefficients de Fresnel d'un cristal uniaxe absorbant et applica- tion à la détermination des constantes optiques. H. DAMANY et E. UZAN	131
Chrominanz und Farbart (Chromatizität) beim Farbfernsehen. HORST SCHEIBNER	143
Book reviews	151

No. 3 March 1970

The computation of diffraction patterns in the presence of aberrations. H. H. HOPKINS and MARIA J. YZUEL	157
Effect of object contrast on the images of straight edges in partially coherent illumination. B. M. WATRASIEWICZ	183
Sur la notion de pouvoir de localisation. G. ROBLIN	189
A new way of representing the effect of optically anisotropic elements by rotations of a sphere. J. E. VOS and B. S. BLAISSE	197
Spectrométrie à grille de 20 à 45 μ . GEORGES GAUFFRE	205

	Page
Correspondence:	
Fringes in transmission with zero minimum intensity resulting from phase modulation of one beam. N. BARAKAT and F. H. EL-DEGHAIDY	215
Research Notes:	
Influence des dimensions du champ d'analyse sur la précision des mesures de fonction de transfert optique. J. SIMON	221
An extension of Fermat's theorem. H. H. HOPKINS	223
Symposium Report:	
Sira Symposium on Measurement and Application of OTF, 21 July 1969	227
Obituary Notice:	
T. SMITH	231
Announcements:	
Summer School in Space Optics.. .. .	233
Formation of a Quantum Electronics Division of the European Physical Society (EPS)	235

No. 4 April 1970

The application of spatial filtering techniques to profile inspection, and an associated interference phenomenon. G. D. DEW	237
Die Bewertung der inkohärenten optischen Abbildung bei Vorgabe beliebiger Objektstrukturen. A. BIGELMAIER	259
Theorie der Queraberrationen holographischer Abbildungen. W. RICHTER	285
Effect of non-uniform aperture illumination on the rectangular wave response of a diffraction limited imaging system with a slit aperture. P. K. KATTI, K. SINGH and K. N. CHOPRA	299
Correspondence:	
Repérage photométrique des longueurs d'onde grâce à un bord d'absorption. MME M. T. DUDERMEL, J. CORNO et J. SIMON	315

No. 5 May 1970

Influence of the atmosphere on optical systems. J. B. FARROW and A. F. GIBSON	317
Partially coherent imagery in the presence of aberrations. RICHARD BARAKAT	337
Die Farbfehlerkorrektur von Multipletts. M. HERZBERGER und H. PULVERMACHER	349
Optical properties of the linear critical-angle refractometer. J. E. GEAKE	363
The Savart interferometer modified for high sensitivity in measurements of refractive index gradients. LARS-ERIK WALLIN and KERSTIN WALLIN	381
Book reviews	393

No. 6 June 1970

	Page
Phase contrast imagery of circular phase objects in partially coherent light. M. DE and P. K. MONDAL	397
Images de bords de phase en éclairage partiellement cohérent en microscopie à contraste de phase. P. K. MONDAL et S. SLANSKY	425
A new technique for the performance analysis of a polarizing microscope with crossed nicols. P. K. KATTI, K. SINGH and K. N. CHOPRA ..	439
Emission eines beliebig streuenden Mediums. F. RÖSSLER	453
Diffraction par un réseau conducteur nouvelle méthode de résolution. JAMES PAVAGEAU et Mlle JACQUELINE BOUSQUET	469
Book reviews	479

No. 7 July 1970

Optical systems for use at low light levels. J. BECKER	481
The systematic design of two-component objectives. H. H. HOPKINS and V. VENKATESWARA RAO	497
Untersuchung der subjektiven Detailerkennbarkeit mit Hilfe der Ortsfrequenzfilterung. U. GREIS und R. RÖHLER	515
The 'equivalent interferometer' in holography. G. L. ROGERS	527
Calcul des images de diffraction d'objets étendus en éclairage cohérent. I. Cas d'un objet carré. G. BOYER, J. HURIET et B. LAMOUROUX ..	539
Calculation of the response curve of a solid photochromic film. C. T. SLACK	547
Correspondence:	
Linear electro-optic effect in hexamine. O. C. JONES and C. FORNO	559
Optical processing of bubble chamber photographs. W. T. WELFORD	563

No. 8 August 1970

Thin-lens theory of zoom systems. THOMAS H. JAMIESON	565
Etude du bruit et classification du récepteur photographique. P. BOUCHARÉINE	585
Inhomogeneity in thin films of zinc sulphide. W. R. OLIVER	593
Monochromateur à réseau concave en incidence normale pour l'ultra-violet lointain. M. PRIOL, A. QUEMERAIS et S. ROBIN	603
Fraunhofer diffraction in partially space coherent light by slit aperture with amplitude filters. K. SINGH and B. N. GUPTA	609
The fluctuations of intensity at the focus of an annular aperture. M. S. SODHA, A. K. AGGARWAL and R. S. SIROHI	623
Correspondence:	
Image encoding in modulated gratings from 1899 to 1970. KLAUS BIEDERMANN	631
Book reviews	637

No. 9 September 1970

	Page
Image quality in the human eye. G. WESTHEIMER	641
Optical and partial pressure analysis during deposition of MgF_2 films in ultra high vacuum. D. HACMAN	659
Theory of the non-linear transverse Kerr magneto-optic effect in ferromagnetic metals. P. E. FERGUSON and R. J. ROMAGNOLI	667
Light intensity distributions within successive slits imaged by transmitting gratings. P. S. THEOCARIS, A. P. VAFIADAKIS and C. LIAKOPOULOS ..	683
Image enhancement and film-grain noise. DAVID G. FALCONER	693
Point characteristics of some static spherically symmetric space-times. H. A. BUCHDAHL	707
Notice. B.C.S. Laboratory Approval	715
Book reviews	717

No. 10 October 1970

A radial-shear interferometer for use with a laser source. W. H. STEEL	721
Fibre optics photoelectric colorimeter. I. G. H. ISHAK	725
Application du théorème d'échantillonnage à la restitution d'objets partiellement connus. I. Principe d'une déconvolution partielle. O. ROBAUX et B. ROIZEN-DOSSIER	733
Some observations on scattered light and Lyman ghosts given by diffraction gratings. J. F. VERRILL	747
Some statistical properties of random speckle patterns in coherent and partially coherent illumination. J. C. DAINTY	761
Champ électromagnétique diffusé par un cylindre en incidence oblique. J. DALMAS	773
Modulation of truncated periodic targets in partially coherent light. P. K. MONDAL and S. SLANSKY	779
Correspondence:	
Interferometric studies on optical dispersion of cadmium iodide and lead iodide crystals. N. BARAKAT and T. EL-DESSOUKY ..	791
Symposium Report:	
Symposium International sur les Applications de l'Holographie ..	797

No. 11 November 1970

Resonant modes in laser cavities immersed in a homogeneous moving medium. HARRY SCHACHTER and CHANGHWI CHI	801
Application du théorème d'échantillonnage à la restitution d'objets partiellement connus. II. Méthodes numériques. O. ROBAUX ..	811
Some effects of spatial and temporal coherence in holography. HIROFUMI FUJIWARA, TOSHIMITSU ASAKURA and KAZUMI MURATA	823
Effect of partial coherence on the resolution of a microscope. R. S. SIROHI and G. S. BHATNAGAR	839

	Page
Réflexion et transmission d'une onde plane par les interfaces à rugosités périodiques d'un milieu stratifié. M. F. VERHAEGHE	843
Asymmetry in the diffraction pattern of a grating due to periodic errors. R. C. PRESTON	857
On combined spatial and temporal characteristics of optical systems. LEO LEVI	869

No. 12 December 1970

Fringe localization and visibility in classical hologram interferometers. W. H. STEEL	873
Recording of in-plane surface displacement by double-exposure speckle photography. E. ARCHBOLD, J. M. BURCH and A. E. ENNOS ..	883
On the concept of homologous rays in holographic interferometry of diffusely reflecting surfaces. STEN WALLEES	899
The immersion grating: practical considerations. T. LARSSON and H. NEUHAUS	915
The far-field diffraction properties of apertures. I. Circular apertures with Besinc correlated illumination. S. C. SOM and S. C. BISWAS ..	925
Remark on a result relating to path differences. H. A. BUCHDAHL ..	943
Book reviews	951
Index of authors (with titles)	953

